

ADMINISTRATIVE RECORD

TABLE CS-4

Second Hand Store ACM Removal, Demolition and Reconstruction

COST ESTIMATE SUMMARY

te: Libby Asbestos De cation: Libby, Montana te: April 29, 2003				om after	, earsportation	ir airų	Usposal GI A	CM materials, demolition and reconstruction of The Second H	and state,
PITAL COSTS:									
					UNIT				
DESCRIPTION	QTY		UNIT		COST		TOTAL	NOTES	REFERENCE
ACM Personal Protective Equipment (PPE)		1	LS	\$	4,792	\$	4,792	Based on duration of VCI and ACM removal	CW3-1
Portable Decontamination Facility		1	EA	\$	1,345	\$	1,345		CW3-2
Containment System and Set-up		1	L\$	\$	12,154	\$	12,154	Based on building size	CW3-3
VCI Bulk Removal		1	LS	\$	15,932	\$	15,932	Based on size of the walls contaminated with VCI	CW3-4
Asbestos-Contaminated Soil Removal		1	LS	\$	183	\$	183	Based on soil contaminated volume	CW3-5
Transportation and Disposal		1	L\$	\$	10,800	S	10,800	Based on the volume of VCI and ACM	CW3-6
Demolition PPE		1	LS	\$	1,297	\$	1,297		CW3-7
Building Demolition		1	LŞ	\$	31,658	\$	31,668	Based on approx. size of building	CW3-8
Site Restoration		1	LS	\$	3,523	\$	3,523		CW3-9
Building Construction		1	LS	\$	299,045	\$	299,045	Based on approx. size of building	CW3-10
Site Breakdown		1	LS	\$	4,985	\$	4,985		CW3-11
Reptace inventory		1	LS	\$	6,210	\$	6,210	Value to be assessed	CW3-12
SUBTOTAL					1	\$	391,924		

Capital Cost Sub-Element ACM Personal Protective Equipment

Libby Asbestos

Location: Libby, Montana

Phase: Base Year: 2003

Prepared By: Checked By:

A. Rassas B. Cotton

Date: 4/28/2003

Date: 5/2/2003

This sub-element includes Personal Protective Equipment (PPE) and two-way communication radies membed for the duration of VO bulk removal and asbestoe conteminated soil removal. Disposable items are used at a rate of 2 per grew member per day,

Personal Protective Equipment and Respirators (6 days)

DESCRIPTION	QTY	UNIT(S)	HEFF	LABOR	LABOR	EQUIP	ADJ EQUIP	MATL	OTHER	UMMOD UC	UNMODILIC	EF	AF	UNBURLIC	PC OH	PCPF	BURLIC	CITATION	COMMENTS
Communications		Γ'' '	<u> </u>																
Two-Way Radios	9	EA	1.00	\$0.00	\$0.00	\$0.00	10.00	\$80.00	\$0.00	\$50.00	\$540.00	1.04	1.13	\$631.60	15%	É	\$785	E 33-01-0420	T _
Lovel C PPE		Τ					<u> </u>												<u> </u>
Disposable Coveralts (tyvel/polycosted)	64	EA	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5.80	\$0.00	\$5 60	\$494.78	1.04	1.13	\$578.87	15%	ŧ	\$719	E 33-01-0424	<u> </u>
Disposable Bool Cover (Tyvek)	84	EA	1.00	\$0.00	\$0.00	\$0.00	\$0,00	\$1,13	\$000	\$1.13	\$94.92	1,04	1.13	\$111.08	15%	6%	\$138	€ 33-01-0421	
Half-Fuce Respirator	7	ËA	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.62	\$0.00	\$49.62	\$347.34	1.04	1.13	\$406 39	15%	8%	\$505	E 33-01-0435	<u></u>
Cartridges	84	ËA	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.04	\$000	\$20.94	\$1,758.68	1.04	1 13	\$2,067.98	15%	6%	\$2,550	€ 33-01-0435	
Disposable Gloves, later, pair	84	ÉA	1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.21	\$000	\$0.21	\$17.84	1 03	1.13	\$20.46	15%	6%	\$25	R 33-01-0423	T
Safety goggles, reusable	7	EA	1.00	\$0.00	\$0.00	\$0.00	\$0,00	\$8 38	\$000	\$6.38	\$44.66	1.00	1.13	\$51.81	15%	6%	\$84	R 33-01-0427	
·														101	AL UNIT C	OST:	\$4,792		

TABLE CW3-1

Area factor is from Exhibit 6-2 of "A Guide to Developing and Documenting Coat Estimates During the Feasibility Study", EPA 2000

Excalation factor is index from base year of estimate divided by index from year of cost data

Excatation indices are from Exhibit 6 1 of "A Guide to Developing and Documenting Cost Estimates During the Femiletry Study", EPA 2000, and http://www.enr.com/femilines/conf.coiosstnderam/default.asp

HTRW productivity factor is from Exhibit B-3 or B-4 of "A Guida to Developing and Documenting Cost Estimates During the Feesblity Study", EPA 2000

Source of Cost Date:

NA - Not Applicable - costs are from previous work or vendor quote

For citation references, the following sources easily

O - ECHOS Unit Cost Book 1995, E - ECHOS Unit Cost Book 2000; C - Means CostWorts 2000; F - Means Fec Constr. Cost Data 1995; R - Means Environmental Parmediation Cost Data 2001

P - Based on Previous Work by CDM Federal, V - Vendor Quole; A - Allowance Assumed

L - Average Professional Labor Rates for 2002 (Average Rates Compiled from Vanous State/Federal Public Contract Sources)

Cost Adjustment Check/let: EACTQS: HBS Productivey (labor and equipment only)

Escalation to Base Year

Subcontractor Overhead and Profit

Area Cost Factor

Prime Contractor Overhead and Profit

Field work will be in Level "C" and "D" PPC. An HPF of 0.95 is used for labor and equipment unit costs true occur in contaminated anges

2001 costs sources are excelested by 3% to 2003 costs (EF+1.03), 2000 cost sources - 4% (EF+1.04), 1998 cost sources - 9% (EF+1.09), and 1998 cost sources - 17% (EF+1.17).

An AF of 1,13 is used for Montana, except on AF of 1,90 (national unmodified everage) is used for local vendor quotes

It is assumed that Subcontractor O&P is either included in the PC O&P or has been factored into vendor quotes or previous work.

If its assumed that home office OH is 5%, and field office OH is 10%. Profit of 5% is used for the Prime Contractor.

Abbrevietione;

OTY quantity

EQUIP equipment

MATL material

HEFF HTRW productivity factor ADJ LABOR indicated labor for HFP

ADJ EQUIP edjusted equipment for HFP

UNMOD UC unmodified unit cost

UNMODIUS unmodified line tiem cost

EE assistion factor

AF was factor

UNBURILIC unpurdened line item cost PC OH prime contractor overhead

PC PF prime contractor profit

BUR UC burdened line item cost

TABLE CW3-2 Capital Cost Sub-Element Decontamination Facility Libby Asbestos Prepared By: A. Rassas Date: 4/28/2003 Location: Libby, Montana Checked By: B. Cotton Date: 5/2/2003 Base Year: 2003 This sub-element includes portable departamination facility cost for the decontemination of employees, meterials, and equipment for the duration of asbestos removal. Cost Analysis: Portable Decontamination Facility DESCRIPTION QTY UNITED LABOR EQUIP EQUIP MATL OTHER UNMODUC UN8600 LIC UNBURLIC PC OH PC PF BUR LIC CITATION COMMENTS Set Up Portable Asbeptos Decontamination Feelilly Conf. ĒΑ 1.00 \$50.44 159 44 \$13.99 £13.00 \$816.39 \$0.00 \$691.61 \$891 81 \$800.38 \$1,117 21134045 Ramove Portable Astesioe Decontamination Post \$20.00 Abatement Cleanup \$20.98 \$30 92 \$0.00 \$141.08 \$141.08 1.17 1.13 \$163.37 16% 21134078 TOTAL UNIT COST: \$1,345 Notes: Abbreviations: Area factor is from Exhibit 8-2 of *A Guide to Developing and Documenting Cost Estimates During the Feesibility Study*, EPA 2000. QTY quantity EA each Escalation factor is index from base year of estimate divided by index from year of cost data. EOUIP equipment Escalation indices are from Ephibit B 1 of "A Guide to Developing and Documenting Cost Estimates During the Fessibility Study". EPA 2000, and http://www.err.com/features/conEco/cost/indexes/defaut.asp MATL material I-TTRW productivity factor is from Euhibit B-3 or 8-4 of "A Guide to Developing and Documenting Cost Estimates During the Feasibity Study", EPA 2000 HPF HTRW productivity factor ADJ LABOR adjusted labor for HFP Source of Cost Date; ADJ EQUIP adjusted equipment for HFP NA - Not Applicable - costs are from previous work or vendor quote UNMOD UC unmodified unit cost For citation references, the following sources apply: UNIMOD LIC unmodified line item cost O - ECHOS Unit Cost Book 1998, E - ECHOS Unit Cost Book 2000; C - Meurit CostWarks 2000; F - Meurit Fat Coretir. Cost Data 1998; R - Means Environmental Remediation Cost Data 2001 EF escalation factor P - Based on Previous Work by CDM Federat, V - Vendor Quote; A - Allowance Assumed AF area fector L. Average Professional Labor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources) UNBURIUC unburdened time item cost PC OH prime contractor everhead Cost Adjustment Checklist: PC PF prime contractor profit FACTOR: H&S Productivity (tabor and equipment only) BUR LIC burdened line item cost Field work will be in Level "C" and "D" PPE. An HPF of 0.05 is used for labor and equipment unit costs that occur in contaminated areas. Excelation to Base Year 2001 cost sources are escalated by 3% to 2003 costs (EF=1,03), 2000 cost sources - 4% (EF=1,04), 1998 cost sources - 9% (EF=1,09), and 1998 cost sources - 17% (EF=1,17), Area Cost Factor An AF of 1,13 is used for Montana, except an AF of 100 (national unmodified everage) is used for local vendor quotes II is essumed that Subcontractor OSP is eather included in the PC OSP or has been factored into vendor quotee or previous work, Subcontractor Overhead and Profit it is assumed that home office CH is 5%, and field office CH is 10%. Profit of 8% is used for the Prime Contractor Prime Contractor Overhead and Profit

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TABLE CW3-3

Capital Cost Sub-Element Containment System and Set-up

Libby Asbestos

Location:

Libby, Montana

Phase: Base Year: 2003

Checked By: B. Cotton

A. Rassas

Prepared By:

Date: 4/28/2003

Date: 5/2/2003

Work Statement:

This sub-element includes containment of the building by sealing all openings and providing negative air pressure.

Cost Analysis:

Building Containment and Set-up (2 days)

		Ī		- "	<u> </u>		MOJ.													
DESCRIPTION	<u>atr</u>	UNIT(S)	HFF	LABOR	LABOR	EQUIP	EQUIP	MATI,	OTHER	UNMADD UC	UNMAIOD LIC	_ EF	AF_	UNBUR LIC	PC QH	PC PF	BURLIC		CITATION	COMMENTS
Seal all openings with polyethylene sheeting	310	.	0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0 10	\$0.00	\$0.10	\$31.02	1.03	1 13	\$35.98	15%_	_ 8%	\$45	R	25 01 0210	
Set up negative air machine, 1000-2000CFM unit, 25 KCF room volume	10	EA	0.55	\$59.27	\$197.77	\$0.94	\$1.70	\$309 20	\$0.00	\$418.66	\$4,166.65	1.17	1.13	\$5,442.64	15%	274	\$8,760	0	21134049	
3 laborers - full time	48	HRS	1.00	\$31.06	\$31.06	\$0.00	\$ 0 00	\$0.00	\$0.00	\$31.06	\$1,490.40	1.04	1.13	\$1,743.77	15%	6%	\$2,166	Ç	Crew A-11	
3 equipment operators-medium	48	HRS	1.00	\$28.85	\$29,85	\$1.00	\$1.00	\$0.00	\$0.00	\$29.66	\$1,432.80	1.04	1.13	\$1,878.38	15%	6%	\$2,062	Ç	Crew A-3B	
1 forgmen - full time	16	HRS	1.00	\$31,56	\$31,56	\$0.00	\$0.00	\$0.00	\$0.00	\$31.56	\$504.80	1.04	1.13	\$500 62	15%	8%	\$734	lc	Orew A-11	
1 elle menager -1/2 lime	- 8	HRS	1.00	\$31,58	\$31.55	\$0.00	\$0.00	\$0.00	\$0.00	\$31.56	\$252.40	1.04	1.13	\$295.31	15%	5%	\$367	c	Crew A-11	
<u> </u>														101	AL UNIT C	OST:	\$12.154			

Notes:

Area factor is from Exhibit 8-2 of "A Guide to Developing and Documenting Cost Estimates During the Fessibility Study", EPA 2000.

Excalation factor is index from base year of estimate divided by Index from year of cost data

Escalation inclose are from Entities 8-1 of "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study", EPA 2000, and http://www.erm.com/legiuma/con/Eco/cost/Indexes/dofaut asp.

Source of Cost Date:

NA - Not Applicable - goals are from previous work or vendor quote

For citation references, the following sources apply:

O - ECHOS Unit Cost Book 1986; E - ECHOS Unit Cost Book 2000; C - Meene CostWarks 2000; F - Meene Fac, Constr., Cost Data 1996; R - Meene Environmental Remodustion Cost Data 2001

P - Based on Previous Work by CDM Federal; V - Vendor Quoto; A - Allowance Assumed

L - Average Professional Labor Rates for 2002 (Average Rates Compiled from Vertous State/Federal Public Contract Sources)

Cost Adjustment Checklist:

EACTOR: H&S Productivity (labor and equipment only)

Field work will be in Level "C" and "O" PPE. An HPF of 0.95 is used for labor and equipment unit coate that occur in contaminated areas.

2001 cost sources are exceleted by 3% to 2003 costs (EF=1 03), 2000 cost sources - 4% (EF=1,04), 1666 cost sources - 9% (EF=1,09), and 1666 cost sources - 17% (EF=1,17). Escaration to Base Year

Aree Cost Factor An AF of 1,13 is used for Montane, except on AF of 1,00 (national syntholisisd siverage) is used for local vendor qualities

It is assumed that Subcontractor OSP is either included in the PC OSP of hits beam lactored into vendor quotee or previous work. Subcontractor Overhead and Profit

It is essumed that home office OH is 5%, and field office OH is 10%. Profit of 6% is used for the Prime Contractor. Prime Contractor Overhead and Profit

Abbreviations;

FA each

QTY quantity

EQUIP equipment MATL material

HPF HTRW productivity factor

ADJ LABOR, adjusted labor for HFP

ADJ EQUIP adjusted equipment for HFP

UNMODUC unmodified unit cost

UNMOD LIC unmodified line item cost. EF escalation factor

AF erea factor

UNBURIUC unburdened line item cost PC OH prime contractor overhead

PC PF prime contractor profit

BUR LIC burdened line item cost

Capital Cost Sub-Element VCI Bulk Removal

Libby Asbestos

Location: Libby, Montana

Phase: Base Year: 2003

A. Rassas Prepared By:

B. Cotton

Checked By:

Date: 4/28/2003

Date: 5/2/2003

This auth-element includes the removal of vermiculite containing insulation by removing intentor will and vacuuming material from intentor of wall and affic floor,

Cost Anshrais:

VCI Bulk Removal (5 days)

					ADJ		AD3												
DESCRIPTION	. QTY	user((s)	MPF	LABOR	LABOR	EQUIP	EQUIP	MATL.	OTHER	UNMOD UC	UNMOD LIC	EF	AF	UNBURLIC	PC OH	PC PF	BURLIC	CITATION	COMMENTS
Vacuum Truck and driver	49	HRS	1.00	\$40.00	\$40.00	\$80.00	\$80.00	\$0.00	\$0.00	\$120.00	\$4,600.00	100	1.00	\$4,600.00	15%	.8%	\$5,962	 -	
(Labor for VCI removal (4 (aborers)	160	HRS	1.00	\$31.05	\$31.06	\$0.00	\$0.00	\$0.00	\$0.00	\$31,05	\$4,988.00	104	1.13	\$5,812.56	15%	8%	\$7,210	C 0994A-11	
Labor for VCI removal (1 foreman)	40	HRS	1.00	\$31.55	\$31.55	\$0,00	\$0.00	\$0.00	\$0.00	\$31.65	\$1,262.00	1.04	1.13	\$1,478,54	19%	8%	\$1,634	C Crew A-11	
Labor for VCI removal (1 ste meneger - 1/2 lime)	20	HRS	1.00	\$31.55	\$31.55	\$0.00	\$0.00	\$0.00	\$0.00	\$31.56	\$831.00	1.04	1.13	\$738.27	15%	6%	\$917	C Crew A-11	
														TOTA	AL UNIT O	OST:	\$15,032		

TABLE CW3-4

Area factor is from Euribii B-2 of "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study", EPA 2000

Escalation factor is index from base year of eathruse divided by index from year of cost data

Escalation indices are from Exhabit 6-4 of "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study". EPA 2000, and http://www.orr.com/features/costEco/costIndoces/default.asp

HTRW productivity factor is from Exhibit 8-3 or 8-4 of "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study", EPA 2000

Source of Cost Date:

NA - Not Applicable - costs are from previous work or vendor quote

For citation references, the following sources apply:

O - ECHOS Unit Cast Book 1985, E - ECHOS Unit Cost Book 2000; C - Misers Cost(Vorks 2000; F - Misers Fist Corretr, Cost Date 1996; R - Misers Environmental Remediation Cost Date 2001

- Based on Previous Work by CDM Federal; V - Vendor Quote, A - Allowance Assumed

- Average Professional Labor Rates for 2002 (Average Rates Compiled from Venous Statut-Federal Public Contract Sources)

Cost Adjustment Checklist:

FACTOR

H&S Productivity (labor and equipment only)

Escalation to Base Year

Subcontractor Overhead and Profit

Prime Contractor Constant and Profit

Area Cost Factor

Field work will be in Level "C" and "D" PPE. An HPF of 0.95 is used for labor and equipment unit costs that occur in contaminated areas.

2001 cost sources are esculated by 3% to 2000 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1996 cost sources - 9% (EF=1.09), and 1996 cost sources - 17% (EF=1.17).

An AF of 1.13 is used for Montana, except on AF of 1.00 (restored unmodified everage) is used for local vendor quotes.

It is assumed that Subcontractor OSP is either included in the PC OSP or has been factored into vendor quotes or previous work.

It is assumed that frome office OH is 5%, and field office OH is 10%. Profit of 5% is used for the Prime Contractor.

Abbreviations:

QTY quantity EQUIP equipment

MATL material

HPF HTRW productivity factor

ADJ LABOR adjusted labor for HFP

ADJ EQUIP edjusted equipment for HFP

UNMOD UC unmodified unit cost

UNMODIUC unmodified line item cost

FF excelation factor

AF area factor

UNBURIEC unburdened line item cost

PC OH prime contractor overhead

PC PF prime contractor profit

BURILIC burdened line item cost

TABLE CW3-5 Capital Cost Sub-Element Asbestos-Contaminated Soil Removal Libby Asbestos Prepared By: A. Rassas Date: 4/28/2003 Location: Libby, Montana Phase: Base Year: 2003 Date: 5/2/2003 Checked By: B. Cotton Work Statement This sub-element includes removal of autostop contaminated soil from the perimeter of the building (44 BCY) and the Crawl space (96 BCY) Cost Analysis: labeatoe-contaminated and removal. I day for exterior removal and 2 days for crievil space removal. OTY AUTOS HFF LABOR EQUEP OTHER UNAMOD UC UNEMODILIC EF UNBUR LIC DESCRIPTION AF. PC OH PC PF BUR UC CITATION COMMENTS 440 1 60 0 066 5000 \$0.00 \$0:00 \$0,93 \$1.60 \$0.00 \$1.50 \$237,04 1.04 1.13 \$277.34 Loosen soil (Interior end exterior) 15% 8% \$344 2310 480 0020 Includes equipment cost only. 24 ARS 1.00 \$40.00 \$40.00 \$80.00 \$80.00 \$0.00 \$0.00 \$120.00 \$2,880.00 1.00 1.00 \$2,680.00 \$3,577 Vacuum truck and driver 8% 1.00 \$31.05 \$31.05 \$0.00 \$0.00 \$0.00 \$0.00 \$31.05 \$1,987.20 \$2,325.02 \$2,000 Lebor for interior soil removal (4 teborers, 2 de/s). 15% Crew A-11 Cabor for interior soil removal (1 foreman, 2 days) HRS \$31,56 \$0.00 **\$9.00** \$000 \$0.00 \$31,55 \$504.60 \$734 \$500.62 Crew A-11 HRS \$0.00 \$0.00 \$0,00 \$31.55 \$262,40 \$307 Labor for interior soil removal (3 site manager for 1 day) 30 00 \$206 31 Crew A-11 Labor for exterior soil removal and replacement (4 HRS 10.00 \$31.06 laborary, 1 day) \$31.05 \$0.00 \$0.00 \$0.00 \$983.60 \$1,162.51 \$1,444 6% OW A-11 Labor for exterior spil removal and replacement (1 foreman, 1 day) \$31.55 \$31.65 \$0.00 \$0.00 \$000 \$0.00 \$31,55 \$252.40 1.04 \$295 31 19% 6% \$387 Crew A-11 Labor for exterior eoil removaland replacement (1.840 \$128.20 \$147.66 manager for 0.5 day) Crew A-11 Unclassified Fill, 6" lifts, off-site, includes delivery. spreading, and compaction \$0.00 \$0.00 \$5.30 \$512.58 15% 17 03 0423 TOTAL UNIT COST: \$10,541 Abbreviations: Area factor is from Exhibit 8-2 of "A Guide to Developing and Documenting Cost Estimates During the Feasibitity Study". EPA 2000 OTY quartity EA each Escatetion factor is index from base year of estimate divided by index from year of cost date. **ECKUP** equipment Escalation indices are from Eshibit B-1 of "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study", EPA 2000, and http://www.enr.com/testures/conEco/costindexes/celault sep MATL material HTRW productivity factor is from Exhibit B-3 or 6-4 of "A Quide to Developing and Documenting Cost Estimates During the Featability Study", EPA 2000 HPF HTRW productivity factor ADJ LABOR adjusted labor for HFP Source of Cost Date: ADJ EQUIP adjusted equipment for HFP NA - Not Applicable - costa ere from previous work or vendor quote UNMOD UC unmodified unit cost For citation references, the following sources apply: UNMACO LIC unmodified line item cost O - ECHOS Und Cost Book 1996, E - ECHOS Unit Cost Book 2000; C - Means CostWorks 2000; F - Means Fac Constr. Cost Data 1996; R - Means Environmental Remediation Cost Data 2001 EF accelation factor - Based on Previous Work by COM Federal: V - Vindor Quote; A - Allowance Assumed Af area factor - Average Professional Labor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources) UNBURIUC unburdened fine item cost

Cost Adjustment Checklist

FACTOR

H&S Productivity (tabor and equipment only)

Escalation to Base Year

Area Cost Factor Subcontractor Overheed and Profit NOTES:

Field work will be in Level "C" PPE. An HPF of 0,95 is used for labor and equipment unit costs that occur in contaminated eress.

2001 cost sources are excellented by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1998 cost sources - 6% (EF=1.09), and 1998 cost sources - 17% (EF=1.17).

An AF of 1 13 is used for Montana, except an AF of 1.00 (national unmodified everage) is used for local vendor quotee.

It is assumed that Supportractor OSP is either included in the PC OSP or has been factored into vendor quotes or previous work.

PC OH prime contractor overhead

PC PF prime contractor crofu

BUR LIC burdened line dem cost

TABLE CW2-8 Capital Cost Sub-Element Transportation and Disposal Site: Libby Asbestos Prepared By: A. Rassas Date: 4/26/2003 Location: Libby, Montana Phase: B. Cotton Date: 5/2/2003 Checked By: Base Year: 2003 Work Statement: This extratement includes the storage, transporation and disposal of all contaminated material to the subsetos land the Asbestos Conterninsted Material Disposal LABOR EQUAP MATL OTHER UPANOO UC UNMODILIC UNCOUNTLIC PC OH BUR LIC CITATION COMMENTS DESCRIPTION 1.00 \$0.00 \$0,00 EA \$0.00 \$0.00 \$0,00 \$2,00.00 \$2,00,00 \$1,600.00 1.00 \$1,800.00 15% 8% \$2,238 Transpotation fee for Vacuum bosses to land \$0.00 \$32,00 \$32.00 100 Appentice LandIIII Oraposal, tipping fee \$6,695.00 \$8,896.00 15% \$8.584 TOTAL UNIT COST: \$10,400 Notes: Abbreviations: Area factor is from Exhibit 8-2 of "A Guide to Developing and Documenting Cost Estimates During the Feesibility Study", EPA 2000. OTY quantity EA each Excelation factor is index from busy year of estimate divided by index from year of cost data. **COURT equipment** Excellation indices are from Exhibit B-4 of "A Guide to Developing and Documenting Cost Estimates During line Feasibility Sauty". EPA 2000, and http://www.enr.com/leatures/conEco/costin-decea/default.asp MATL material htTPW productivity factor is from Exhibit 8-3 or 8-4 of "A Guide to Developing and Documenting Cost Estimates During the Fossibility Study", EPA 2000 HPF HTRW productivity factor ADJ LABOR adjusted labor for HFP ADJ EQUIP adjusted equipment for HFP Source of Cost Data: MA - Not Applicable - costs are from previous work or vendor quote UNMODUC unmodified unit cost For catation references, the following sources apply: UNMOD LIC unmodified line item cost G - ECHOS Unit Cost Book 1985, E - ECHOS Unit Cost Book 2000; C - Mauris CostWorks 2000; F - Magne Fec Constr., Cost Date 1995; R - Magne Environmental Remediation Cost Date 2001 EF excetation factor P - Based on Previous Work by CDM Federal: V - Vendor Quote: A - Allowance Assumed AF area factor L - Average Professional Labor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources) UNBUR LIC unburdened line Item cost PC OH prime contractor overhead Cost Adjustment Checklist: PC PE crime contractor molti-**EACTOR:** BURIUC burdened line from cost HES Productively (labor and equipment only) Field work will be in Level "C" and "O" PPE. An HIFF of 0.95 is used for lation and equipment unit costs that occur in contaminated great.

and the second of the second o

2001 cost sources are escalated by 3% to 2003 costs (EF+1.03), 2000 cost sources - 4% (EF+1.04), 1998 cost sources - 9% (EF+1.09), and 1998 cost sources - 17% (EF+1.17).

An AF of 1,13 is used for Montane, except on AF of 1,00 (national immobilied average) is used for local vendor quotes

It is assumed that Subcontractor OAP is either included in the PC OAP or has been factored into vandor quotes or previous work. It is assumed that home office OH is 5%, and field office OH is 10%. Profit of 8% is used for the Prime Contractor.

Exceletion to Base Year

Subcontractor Overhead and Profit

Prime Contractor Overhead and Profit

Area Cost Factor

Capital Cost Sub-Element

Personal Protective Equipment - Demolition

Libby Asbestos

Location: Libby, Montana

Phase: Base Year: 2003

Prepared By: Checked By: A. Rassas

Date: 4/26/2003

B. Cotton

Date: 5/2/2003

This sub-element includes Personal Protective Equipment (PPE) and two-way communication radios needed for the duration of building demotition portion of the project, PPE includes disposable coveralls and ear plugs. Assume notition duration is 3 days.

Personal Protective Equipment - Demolition

				L	ADJ		ADJ				ı			1 -					
DESCRIPTION	 QTY	UNIT(5)	HETE	LABOR	LABOR	EQUIP	EQUIP	MATL	OTHER	UMMOD UC	UNAMOD LIC	EF.	_AF_	UNBUR LIC	РС ОН	PC PF	BURLIC .	CITATION	COMMENTS
Communications	 			_															
Two-Way Radios		EA	1,00	\$0.00	\$0.00	\$0.00	\$0.00	\$80.00	\$0.00	. \$50.00	\$480.00	1.04	1.13	\$581.80	1.6%		\$098	E33-01-0420	
Level D PPE	 									1									
Disposal Coveralts (Tyyok)	90	EA	1,00	5000	\$0.00	\$0.00	\$0.00	\$4.08	\$0.00	\$4,08	\$397 68	1 04	t 13	\$465.52	15%	. 8%	\$578	E 33-01-0425	
Disposable Ear Pjuga, Ppir	 96	ĘA	1,00	\$000	\$0.00	\$0.00	\$0.00	\$0.15	\$0.00	\$0,15	\$14.70	1.04	1.13	\$17.20	15%	8%	\$21	E 33-01-0429	· ·
														TOT	AL UNIT O	OST:	\$1,297		

TABLE CW3-7

Area factor is from Exhibit B-2 of "A Guide to Developing and Documenting Cost Estimates During the Fessibility Study", EPA 2000.

Escalation factor is index from bese year of estimate divided by index from year of cost data.

Escalation indices are from Exhibit B-1, of "A Guide to Developing and Documenting Cost Entimates During the Feasibility Study", EPA 2000, and http://www.enr.com/features/conEco/costinderes/dofautt.esp

HTRW productivity factor is from Euhlips 8-3 or 8-4 of "A Guide to Developing and Documenting Cost Estimates During the Fessibility Study", EPA 2000

Source of Cost Date:

NA - Not Applicable - costs are from previous work or vendor quote

For citation references, the following sources apply

O - ECHOS Unit Cost Book 1985; É - ECHOS Unit Cost Book 2000; C - Means CostWorks 2000; F - Means Fac Constr. Cost Data 1986, R - Maans Environmental Remediation Cost Data 2001

P.- Based on Previous Work by CDM Federal; V.- Vendor Quote; A.- Allowance Assumed

L - Average Professional Labor Rates for 2002 (Average Rates Complied from Various State/Federal Public Contract Sources)

Cost Adjustment Checklist:

FACTOR: H&S Productivity (labor and equipment only)

Excelation to Gate Year

Area Cost Factor

Subcontractor Overhead and Profit

Prime Contractor Overhead and Profit

NOTES:

Field work with the in Level "C" and "D" PPE, An HPF of 0.95 is used for labor and equipment unit costs that occur in opnisminated areas.

2001 cost sources are excelleted by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1995 cost sources - 9% (EF=1.09), and 1995 cost sources - 17% (EF=1.17).

An AF of 1,13 is used for Montana, except on AF of 1,00 (national unmodified everage) is used for local vendor quotes.

It is assumed that Subcontractor O&P is either included in the PC O&P or has been factored into ventor quotes or previous work.

It is assumed that home office OH is \$%, and field office QH is 10%. Profit of 8% is used for the Prime Contractor.

Abbreditions:

QTY quantity EQUIP equipment

MATL material

HPF HTRW productivity factor

ADJ LABOR adjusted lebor for HFP

ADJ EQUIP adjusted equipment for HFP UNMOD UC unmodified unit cost

UNMOD LIC unmodified (me item cost

EF executation factor

AF area factor

UNBUR LIC unburdened line item cost

PC OH prime contractor overhead

PC PF prime contractor profit

BURILIC burdened line stem cost

EA each

											TABLE	CW3-8									
Capital Cost	Sub-Element				_																
Building De																					
	ibby Asbestos															Prepared	i By:	A. Rassas	Date	: 4/28/2003	
ocation: L	ibby, Montana																				
Phase:																Checked	By:	B. Cotton	Date	: 5/2/2003	
Base Year: 2	2003																				
Nort Statement:																					
	Includes building demolition of wood frai	ne and cor	acrese found	letion																	
	the same of the sa																				
Cost Analysis:																					
Building Demalitic	n (7 days)																				
						ADJ		ADJ "											1		
	DESCRIPTION	atr	LAUT(S)	HPF	LABOR	LABOR	EQUIP	EQUIP	MATL	OTHER	UNMAGE UC	UNMOD LIC	EF	AF	UNBURLIC	PC OH	PC PF	BARLIC	CITATION	СОММ	ENT6
	e, multilevel, steel, nonecplosive -		۱	٠	l										i						
	pprox. surve coel	62,660	o≠ .	100	\$0.00	\$0.00	\$0.00	နာလ	\$0.00	\$0.00	\$0.03	\$2,466.40	1.63	1 13	\$2,884.22	15%	8%	\$3,582	R 02049 6110	<u> </u>	
- quantitation derivoi trick, reinforced, s	tion, floors, concrete eleb on grade 4"	5,180	SF	1.00	\$0.00	So∞	\$0.38	\$03A	\$0.00	\$0.00	\$0.38	\$1,988.40	1.09	1.13	\$2,401,48	15%	6%	\$2,983	F 020 754 0280	1	
						77.17	40.00			•••				117.5							
Lebor for demokin	on (3 laborare for 7 days)	166	HRS	1.00	\$31.06	\$31,05	\$0.00	\$0.00	\$0.00	\$0.00	\$3105	\$5,218.40	1.04	6.13	\$6,103.18	15%	8%	\$7,580	C Crew A-11		
	_														1						
Labor for demoliti	on (3 equip, operators for 7 days)	186	HRS	1.00	\$26.56	\$28 55	\$0.00	\$0.00	\$0.00	\$0.00	\$28 66	\$4,798.40	1.04	1.13	\$5,611.70	15%	6%	\$8,970	C Crew A-11		
		50	HRS	1.00	\$31,55	\$31,56	\$0.00	ا ۔۔۔۔ ا	\$0.00	***			۱	٠		ا ا					
Cooler de 1964 de l	olition (1 foremen for 7 days)		7,500,7	··~	41.52	\$31.55	\$0.00	\$0.00	3000	\$0.00	\$31 66	\$1,786 80	3.04	1 13	\$2,087.18	. 16%	6%	\$2,587	C Crew A-11		
Labor for demoliti	on (1 site manager for 3.5 days)	26	HRS	1.00	\$31.55	\$31 56	\$0.00	\$0.00	\$0.00	\$0.00	\$31,55	\$863 40	1.04	1,13	\$1,033.50	15%	6%	\$1,284	C Crew A-11		
			Г			Γ									1						<u> </u>
Lendin Disposal,	wood - transportation and tipping fee	128	CY	100	\$0.00	\$0,00	\$0.00	\$0.00	\$0.00	\$32.00	\$32.00	\$4,093.45	1.00	1.00	\$4,093.46	15%	8%	\$5,084	P		
		۱	l		l	l								l		l			l_		
Lungid Drument.	comprete - transportation and tipping fee	40	L CY	1,00	1000	\$0.00	\$0.00	\$0.00	\$0.00	\$32,00	\$32.00	\$1,294.30	1.00	3.00	\$1,294,36	15%	- 6% 	\$1,608	P	<u> </u>	
															L	AL UNIT C	vai:	131,634	1		
Notes:						_											Abbr	ryfetfone:			
	n Exhibit B-2 of "A Guide to Developing o	and Docum	enting Cost	Estimates	Ouring the I	Founibility St	udy". EPA 2	000							QTY	quantity			EA each		
	is index from base year of estimate divid															اطبيطينهم					
	are from Exhibit B-1 of "A Guide to Dev									r.enr.com/le	utur miconfice	(co-sti reterent/def a	مردد , الد			Malerial					
HTRW productivi	ly factor is from Exhibit 8-3 or 8-4 of *A (Builde to D	evalobină e	nd Docum	enting Cost E	H-mates Du	nng ihe Fee	aibity Study	, EPA 2000								ductivity fac				
Source of Cost (-														ADJ LABOR ADJ EQUIP						
	ge - costa am trom braviona work o, cat.	tor autor													UNMOD UC			74-			
	news, the following sources apply:														UNIMOD LIC						
	Case Book 1998, E - ECHOS Unit Cose 6	ook 2000:	C - Means	CoefWorks	2000; F - M	leana Fac. C	oneir, Coel ()aja (898; R	- Materia Erwire	ormental Ro	mediation Cos	1 Data 2001				escutation					
	rious Work by CDM Federal; V - Vendor														_	aree factor					
L - Average Profe	esional Labor Rates for 2002 (Average F	tates Com	plied from V	arous Sta	tefeterd P	عاري	± Sources)								UNBURIUC						
																	rector overh	eed			
Cost Adjustmen	Checklist:								• • • •								rector profit				
<u>FACTOR:</u> HAS Productority	(labor and equipment only)	NOTES:	المامط القداد		ert TT: 895	An HOE of	06 (0.000	for lating years	enipment :::	t contains	oczaw in czontar	ninated array			BOK UC	oursened t	ine Item dos	t .			

2001 cost sources are escalated by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1995 cost sources - 9% (EF=1.09), and 1996 cost sources - 17% (EF=1.17).

An AF of 1,13 to used for Montana, except on AF of 1 00 (national unnodified invarige) is used for local vendor quotee.
It is assumed that Subcontractor O&P is either included in the PC O&P or has been factored into vendor quotes or previous work.

It is essumed that home office OH is 5%, and field office OH is 10%. Profit of 6% is used for the Prime Contractor.

Escalation to Base Year

Area Cost Factor Subcontractor Overhead and Profil

Prime Contractor Overhead and Profit

Capital Cost Sub-Element

Site Restoration

Libby Asbestos

Location: Libby, Montana

Phase: Base Year: 2003

Prepared By: Checked By:

A. Rassas B. Cotton

Date: 4/28/2003 Date: 5/2/2003

Mork Statement:

This sub-element includes site grading and transportation and disposal coals for building deviction debrts.

Cost Analysis:

Site Restoration (1 day)

					MD)		ADJ			1										
DESCRIPTION	ΦTY	UNITE	1	LABOR	LABOR	EQUIP	EQUAP	MATL	OTHER	VMMOD UC	LEAN COULT	_EF_	_AF	LANGUR LIC	PC OH	PC PF	BURLIC		CITATION	COMMENTS
General labor (3 Unborera)	24	HRS	1.00	\$31.05	\$31.05	\$0.00	\$0.00	\$0.00	\$0.00	\$31.05	\$745.20	104	t 13	\$571.86	15%	6%	\$1,083	Ç	Crew A-11	
Equipment operators (3 equip. operators)	24	HRS	1.00	\$21.65	\$28 55	\$0.00	\$0.00	\$0.00	\$0.00	\$28.55	\$655.20	104	1,13	\$801,68	16%	8%	\$900	С	Crew A-11	
Foreman	4	HRS	1.00	\$21.55	\$31 55	\$0.00	\$0.00	\$0.00	\$0.00	\$31.55	\$126.20	1.04	1,13	\$147.65	15%	- 65	\$163	c	Crew A-11	•
Site manager	4	HPS	1.00	\$31.55	\$31 56	\$0.00	\$0.00	\$0.00	\$0.00	\$31,55	\$120.20	1.04	1,13	\$147.65	15%	6%	\$163	C	Crew A-11	
Pad subgrade preparation, fine greads structure & slabs	1151	SY	1.00	\$0.00	\$0.00	\$0.65	\$0.65	50.00	50.00	\$0.65	\$748.22	1.00		\$667,94			\$1,078	_	A45.4.444	
with grader	1131		1.00	\$0.00	1 40.00	3 0 63	30.05	\$0,00	34.00	\$9.00	3/40,22	1.04	1 113		AL UNIT C	OST:	13,523	<u> </u>	02512 1100	

TABLE CW3-9

Area (actor in from Exhibit B-2 of "A Quide to Developing and Documenting Coal Estimates During the Feasibility Shuby". EPA 2000

Escalation factor is index from base year of estimate divided by index from year of cost date

Escalation indicase are from Exhibit B-1 of "A Guide to Developing and Documenting Cost Estimates During the Ferenblity Study", EPA 2000, and http://www.enr.com/feebres/cost/cost/indexes/default asp

HTRW productivity factor is from Exhibit B-3 or B-4 of "A Guide to Developing and Documenting Cost Estimates During the Femiliaty Study". EPA 2000

Source of Cost Date:

NA - Not Applicable - costs are from previous work or vendor quote

For citation references, the following sources apply:

O - ECHOS Unit Cost Book 1995; E - ECHOS Unit Cost Book 2000; C - Materia Cost/Works 2000; F - Materia Fec Constr. Cost Data 1995; R - Materia Environmental Remediation Cost Data 2001

- Based on Previous Work by COM Federal, V - Vandor Quote; A - Allowance Assumed

- Average Professional Labor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources)

Cost Adjustment Checkfet:

FACTOR:

H&S Productivity (tabor and equipment only)

Seculation to Base Year

Area Cost Factor

Subcontractor Overhead and Profit

Prime Contractor Overhead and Profit

Field work will be in Level "C" and "D" PPE. An HPF of 0.95 in used for labor and equipment unit costs that occur in contaminated areas

2001 cost structes are seculated by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1998 cost sources - 9% (EF=1.09), and 1996 cost sources - 17% (EF=1.17)

An AF of 1.13 is used for Montane, except on AF of 1.00 (national unmodified everage) is used for local vendor quotes.

It is assumed that Subcontractor OSP is either included in the PC OSP or has been factored into vendor quotes or previous work.

It is essumed that home office OH is 9%, and field office OH is 10%. Profit of 6% is used for the Prime Contractor

Abbreviations: OTY quantity

EQUIP equipment

MATL malerial

HPF HTFW productivity factor ADJ LABOR, adjusted tabor for HFP

ADJ EQUIP adjusted equipment for HFP

UNMOD UC unmodified unit cost

UNMOD LIC unmodified line item cost

EF excelsion (actor AF eroo feator

UNBUR LIC unburdened (ine item cost

PC OH prime contractor overhead

PC PF prime contractor profit

SUR UC burdened line item cost

TABLE CW3-10 Capital Cost Sub-Element **Building Construction** Oate: 4/28/2003 Libby Asbestos Prepared By: A. Rassas Location: Libby, Montana Phase: Checked By: B. Cotton Date: 5/2/2003 Base Year: 2003 Work Statement: This sub-element includes the overall cost to re-build the store after demolition; Cout Analysis: Building Construction DESCRIPTION EQUIP UNMANOD UC PC OH BUR LIC CITATION COMMENTS 171 720 0010 Bidg Construction, Ratel Stores, Total project coals \$299,045 TOTAL UNIT COST: \$200,045 Modes:

Area factor to from Edward 8-2 of "A Quide to Designing and Decumenting Code Epitimates-During the Feasebility Study", EPA 2000.

Escalation factor is index from base year of estimate division by index from both or an expension of the control of the con Abbraviations: QTY quantity EA each EQUIP equipment MATL meterial HPF HTRW productivity factor ADJ LABOR edjusted labor for HFP ADJ EQUIP edjusted equipment for HFP Source of Cost Orte: NA - Not Applicable - costs are from previous work or vendor quote UNMOD UC unmodified unit cost UNMODILIC unmodified line item cost For citation references, the following sources apply: O - ECHOS Unit Coat Book 1998; E - ECHOS Unit Coat Book 2000; C - Mayres CoatWorks 2000; F - Mayres Fee: Coretti, Coat Date 1998; R - Means Environmental Remediation Cost Data 2001 EF escelation fector - Based on Previous Work by CDM Federal: V - Vendor Quitte: A - Allowants Assumed AF area factor . - Average Professional Labor Rates for 2002 (Average Rates Compiled from Verieus State/Federal Public Control Sources) UNBURILIC unburdened line item cost PC OH orime contractor overhead Cost Adjustment Checkflat: PC PF prime contractor profit FACTOR BUR LIC burdered line dem cost H&S Productivity flabor and equipment only) Field work will be in Level "C" and "O" PPE. An HPF of 0.96 is used for labor and equipment unit costs that occur in contaminated areas. 2001 cost sources are escalated by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1996 cost sources - 9% (EF=1.09), and 1996 cost sources - 17% (EF=1.17). Escalation to Base Year

An AF of 1,13 is used for Montana, except an AF of 1,00 (national unmodified average) is used for local vendor quotes

It is assumed that home office OH is 5%, and field office OH is 10%. Profit of 6% is used for the Prime Contractor.

It is assumed that Subcontractor OSP is either included in the PC OSP or has been factored into vendor quotes or previous work.

.

Area Cost Fattor

Subcontractor Overhead and Profit

Prime Contractor Overhead and Profit

TABLE CW3-11 Capital Cost Sub-Element Site Breaksown A. Rassas Libby Asbestos Prepared By: Data: 4/26/2003 Location: Libby Montana Phase: Base Year: 2003 Checked By: B. Cotton Date: 5/2/2003 This auti-element tratution cleaning and breaking down equipment following restoration. Cost Anshrels: Sile brackdown (2.5 days). EOUP EQUIP MATL OTHER LINEAROD LIC URMANOD LIC UNIBUR LIC PC PF CITATION DESCRIPTION COMMENTS Labor for site cleaning and breakdown (4 laborers for 2.6 50 00 1 11 9000 \$0.00 \$31.05 \$2.484.00 \$2 906 76 15% \$3,610 Crow A-11 days) Labor for site cleaning and breakdown (1 turemen for 2.5 \$0.00 \$0.00 \$0.00 \$31.66 5831 00 1.04 1.13 \$738 27 15% \$917 Crew A-11 Labor for elle cleaning and breakdown (1 elle meruper lo \$31,56 \$315 50 Crew A-11 TOTAL UNIT COST: \$4,965 Attaced eligina; Area factor is from Establ. B-2 of "A Guide to Developing and Documenting Coal Estimates Quing the Feasibility Study". EPA 2000. OTY quantity FA work

Escalation factor is index from base year of estimate divisied by index from year of cost date.

Excellation indices are from Edition 6-1 of *A Guide to Developing and Occumenting Cost Estimates During the Femplointy Study*, EPA 2000, and http://www.erv.com/feetunes/cost/indexendates/it.asp

HTRW productavity factor is from Exhibit 8-3 or 8-4 of "A Guida to Developing and Decementary Coal Estimates During the Fearablety Study", EPA 2000

Source of Cost Data:

NA - NOI ÁODICEDIO - COSIS ATO ÍTOM (TREVIOUS WORK OF VIIVEUS GAARD

For citation references, the following sources apply.

O - ECHOS Unit Cost Book 1998; E - ECHOS Unit Cost Book 2000; C - Means CostWorks 2000; F - Means Fac Constr. Cost Data 1998; R - Means Environmental Remediation Cost Date 2001

- Broad on Previous Work by CDM Federal; V - Vendor Quote, A - Allowance Assumed

- Average Professional Lapor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources)

Cost Adjustment Checkflet:

FACTOR HAS Productivity (labor and equipment only)

Escalation to Base Year

Area Cost Factor

Subcontractor Overhead and Profil

NOTES:

Field work will be in Level "C" PPE. An HPF of 0.96 is used for labor and equipment unit costs that occur in contaminated areas.

2001 cost mources are excelerable by 7% to 2003 costs (EF=1.09), 2000 cost sources - 4% (EF=1.04), 1998 cost sources - 9% (EF=1.09), and 1998 cost sources - 17% (EF=1.17).

An AF of 1,13 is used for Montana, except an AF of 1,00 (national unmodified average) is used for local vendor quotes.

It is assumed that Subcontractor G&P is either included in the PC G&P or has been factored into vendor quotes or previous work.

EQUIP equipment

MATL material

HPF HTRW productivity factor

ADJ LABOR adjusted labor for HFP

ADJ EQUIP adjusted equipment for HFP

ليحد لوس ليسائله و بين ١٥٥ ١٥٥ ١٥٥ ١٥٥

LENNOCLIC unmodified has demicost

EF escalation factor

AF gree factor

UNRURUIC unburdened time dam coal

PC DH prime contractor overhead

PC PF prime contractor profit

BUR LIC burdened line item cost

Capital Cost Sub-Element

Replace Inventory

Libby Asbestos

Location: Libby, Montana

Phase: Base Year: 2003

Prepared By:

A. Rassas

Date: 4/28/2003

Checked By: B. Cotton Date: 5/2/2003

This sub-element implicate the cost to replace the inventory within the store

Cost Analysis:

Inventory Replacement

					AQJ		AD1		1			1						·	T
DESCRIPTION	QTY	UNIT(1)	一种	LABOR	LABOR	EQUIP	EQUIP	MATL	OTHER	UNMODUC	UNMODIUG	L.ef.」	AF	UMBUR UC	PC OH	PC PF	BURLIC	CITATION	COMMENTS
inventory replacement	1.	LS	1.00	\$0.00	\$0.00	\$6	\$0.00	\$0.00	\$5,000.00	\$5,000.00	\$5,000,00	1,00	1.00	\$5,000.00	15%		\$6,210	ν	Value to be assessed.
											·			TOT	AL UNIT O	OST:	\$4,210		•

TABLE CW3-12

Area (actor to from Exhabit 8-2 of "A Quide to Developing and Documenting Cost Estimates During the Fessibility Study", EPA 2000.

Escutation factor to index from busin year of estimate divided by index from year of cost data

Escalation reticals are from Establic 8-1 of "A Quide to Developing and Documenting Cost Estimates Ouring the Fassibility Souty", EPA 2000, and http://www.enr.com/festures/conEco/costIndexes/delasti.eso

HTTRW productivity factor is from Exhibit B-3 or B-4 of *A Guide to Developing and Documenting Cost Estimates During the Fessibility Study*, EPA 2000

Source of Cost Date:

NA - Not Applicable - costs are from previous work or vendor quote

For citation references, the following sources excits:

O - ECHOS Unit Cost Book 1990; £ - ECHOS Unit Cost Book 2000; C - Maans CostWorks 2000; F - Maans Fec. Constr. Cost Data 1990; R - Means Environmental Remodution Cost Data 2001

- Based on Previous Work by COM Federal; V - Vendor Quote, A - Allowance Assumed

L - Average Professional Labor Rates for 2002 (Average Rates Compiled from Various State/Federal Public Contract Sources)

Cost Advertment Checklist:

FACTOR: H&S Productivity (labor and equipment only)

Exceletion to Base Year

Area Cost Factor

Subcontractor Overhead and Profit Prime Contractor Overhead and Profit

Field work will be in Level "C" and "D" PPE. An HPF of 0.05 is used for labor and equipment unit costs that occur in contaminated areas.

2001 cost sources are escateted by 3% to 2003 costs (EF=1.03), 2000 cost sources - 4% (EF=1.04), 1998 cost sources - 9% (EF=1.09), and 1998 cost sources - 17% (EF=1.17)

An AF of 1.13 to used for Montane, except an AF of 1.00 (national unmodified everage) is used for local vendor quotes.

It is assumed that Subcontractor OAP as either included in the PC OAP or has been factored into vendor quotes or previous work.

It is assumed that home office OH is 5%, and field office OH is 10%. Profit of 6% is used for the Prime Contractor.

Abbreviations:

QTY quantity EQUIP equipment

MATL material HPF HTRW groductivity factor

ADJ LABOR ediusted labor for HFP

ADJ EQUIP ediusted equipment for HFP

UNMOD UC unmodified unit cost

UNMOD LIC unmodified line item cost

EF excelation factor

AF gree fector

UNBURILIC unburdened line dem cost

PC On phine contractor evented

PC PF orms contractor profit

BURILIC burdened live item cost

Client:

Volpe

Project:

Libby Asbestos

By: A. Rassas Ck: B. Cotton

4/28/2003 5/2/2003

Project No.:

2603.025.203.RADSN

Rev. By:

Detail:

Second Hand Store ACM Removal, Demolition and Reconstruction

Removal of asbestos containing materials

Crew:

1 site manager labor foreman

3 laborers

vacuum truck driver 1 3 equipment operators

Total 8 laborers

For PPE estimate use workers inside

7

6,808

Task Durations (assumed)

Containment and set-up 2 days VCI Bulk removal 5 days **Building Demolition** 7 days 1 days soil removal Breakdown 4 days Total 19 days

Area of VCI Bulk Removal

	Width, ft	<u>Heiaht, ft</u>	<u> Area. SF</u>
Attic floor	20	40	800
Walls	19	8	152
	60	8	480
	6	8	48
Total			1480
Add 10% safety factor			1628

Square footage-first floor

	Width, ft	<u>Length, ft</u>	Area, SF
Storage	18	20	360
	14	8	112
	14	8	· 112
	14	12	168
Stairs to attic area	14	12	168
Fire wood storage	10	10	100
Open Area	36	20	; 720
	25.5	30	765
Bathroom	10	10	100
Approx. desk area and			
entrance	30	20	. 600
Additions	35	5	175
	40	5	. 200
	40	10	400
	80	15	1200
			5,180

Total wall/floor cleaning

Installation of containme	nt barrier		
	Width, ft	Height, ft	Area, SF
3 doors	2	7	42
15 windows	4	4	240
Total			282
Add 10 % safety factor			310

Client:

Volpe

Libby Asbestos

By: A. Rassas Ck; B. Cotton

Project: Project No.:

2603.025.203.RADSN

4/28/2003 5/2/2003

Detail:

Rev. By:

Second Hand Store ACM Removal, Demolition and Reconstruction 1

Removal of asbestos contaminated soil

Assume that removal of asbestos contaminated soil will have to be done aalong the perimeter of the N, W, and E sides of building (10' wide by 0.5" deep) and underneath the crawl space closest to the RR tracks (1/2 area of building x 1' deep). South side of building is paved

Along	perimeter	of building
-------	-----------	-------------

Perimeter, ft	Width, ft	Depth, ft	Volume, CF	Volume, CY
239	10	0.5	1195	44
Underneath cra	awl space			
Area, SF	depth, ft			
5,180	0.5		2590	96
			Total:	140

Asbestos landfill disposal volumes			,	
Assume 1/2' thick VCI matl.	Width, ft	Area, SF Vol	ume, CF Volu	me, CY
VCI material	0.5	1628	814	30
Asbestos-contaminated soil				140
Total				170
15% Expansion factor				196
10% Safety factor:				215
Vacuum boxes needed			i	
25 CY boxes				9

Bullding Demolition

2 story building. Each story is 8' high.

Total Volume	<u>Total SF</u> 5,180	<u>Height, ft</u> 16	Volume, CF 82880	Volume, CY 3070
Concrete foundation	5,180	0.333	1727	64

Client:

Volpe

Project:

Libby Asbestos

Project No.:

2603.025.203.RADSN

By: A. Rassas

4/28/2003

Rev. By:

Ck: B. Cotton

5/2/2003

Detail:

Second Hand Store ACM Removal, Demolition and Reconstruction

Demo - Volume of material to be disposed

Assume width of wall is 1/2" thick, exterior and interior. Assume studs spaced every 2" Assume studs are 2x4's.

Width, ft

1/3

Length, ft Stud Vol 1/6

Height, ft Volume, CF 16 0.89

Length, ft.

260

					, 200		
						Interior wall	
	Width, ft	Length, ft Per	imeter, ft,	<u>Height, ft</u>	Area, SF	Width, ft	Volume, CF
Storage	18	20	76	16	1216	0.042	51
	14	8	44	16	704	0.042	30
	14	12	52	16	832	0.042	35
	14	12	52	16	832	0.042	35
Stairs to attic area	14	12	52	16	832	0.042	35
Fire wood storage	10	10	40	16	640	0.042	27
Open Area	36	20	112	16	1792	0.042	75
·	25.5	30	111	16	1776	0.042	75
Bathroom	10	10	40	16	640	0.042	27
Approx. desk area and							
entrance	30	20	100	16	1600	0.042	67
Additions	35	5	80	16	1280	0.042	54
	40	5	90	16	1440	0.042	60
	40	10	100	16	1600	0.042	67
	80	15	190	16	3040	0.042	128
			1139		18,224		765

Exterior wall perimeter = 35 +5 +18 +15+80+75+84 = 312

Perimeter, ft Height, ft. 312

Width, ft Volume, CF 0.042

Assume 1/2 the wall perimeters to account for adjacent walls.

of Studs

Total perimeter dist * 0.5(ft):

570 ft

285

1 stud per 2 ft.

Stud volume(CF): 253

Total, SF Thickness, ft Volume, CF Ceiling 5,180 0.167 865

Floor foundation

5,180

0.167

863

Total Vol., wood only (CF):	2,093
Total Vol. (CY):	78
Add 50% expansion factor:	116
Add 10% safety factor:	128
Total Vol. Concrete ony:	863
Add 15% expansion factor:	993
Add 10% safety factor:	1092
Total Vol. (CY):	40

Site Grading twice the area of bldg. <u> Area, SF</u> Area, SY 10360 1151